MODELS

20/40 GB DAT Drive, Internal

157769-B22 (Carbon)

3R-A3752-AA (Carbon)

3X-SD20X-LB (AlphaServer systems only, Top Gun Blue)

20/40 GB DAT Drive, External

157770-002 (Carbon)

157770-001 (Opal)

20/40 GB DAT Drive, Hot Plug

215488-B21 (Carbon)

3R-A2780-AA (Carbon)

3U Rackmount Kit

274338-B21 (No drives included. Accommodates up to 4 internal AIT DAT drives)

OVERVIEW

The 20/40 GB DAT tape drive is available in internal, external, hot-plug and rackmount configurations. As the tape drive for entry-level and workgroup servers, this device offers 20 GB native capacity on a HP DDS-4 cassette with a transfer rate of 2.3 MB/sec.

HP 20/40 GB DAT Tape drive Customer benefits include:

- Backup rate 8.6 GB/hour native
- 20/40 GB DAT offers investment protection with backward compatibility with previously written DDS-1, DDS-2, and DDS-3 media.
- Reduced spares inventory with a 24 hour exchange
- Easy installation and service
- High availability data protection – increases server up-time

KEY FEATURES

- 20-GB native capacity, 40 GB with 2:1 compression
- 2.4 MB/sec native data transfer speed
- Internal, external and hot plug configurations
- Small form factor, half-height built out to 5¼ inches
- Hot plug configuration fits into a 1.6-inch hot plug bay or two 1-inch hot plug bays in ProLiant and AlphaServer systems and StorageWorks Enclosures
- Supported with VERITAS Backup Exec, Computer Associates and Dantz Retrospect software
- Innovative SCA direct connect tape carrier
- Easy removal of parts provides better serviceability. No tools are required! (Hot Plug and External configurations only)
- Qualified behind Windows® NT® 4.0, Windows 2000, Novell® NetWare®, Tru64 UNIX®, OpenVMS, Linux®, SCO® Unix, and Sun™ Solaris™

PRODUCT HIGHLIGHTS

Disaster Recovery - DRTape

The 20/40-GB DAT tape drive has been improved with the added feature of DRTape**. DRTape insures that in case of a system failure, you will be able to restore your system from a single tape.
What is Disaster Recovery: A 20/40-GB DAT Tape Drive that can:

- Under Disaster Recovery (DR) situations, ID itself as a boot device
- Hold enough information to bring the system up for a DR restore from tape
- Is completely self contained in that it needs no other software or CD's to restore the system.

****NOTE**: DRTape does not support Smart Array Controllers. Please see "DRTape Compatibility Matrix" at: http://www.compaq.com/products/storageworks/drtape/compatibility.html for further information regarding the minimum requirements for operating DRTape.

Hot Plug

Able to mix tape drives and hard drives on the same SCSI Bus without slowing down the performance of the system.

Supported on the Smart Array 5300 controller and Integrated Smart Array controller and selected AlphaServer host bus adapters.

Hot plug components can be replaced without powering down the system. This feature significantly enhances system availability.

Reliability

Advancements in tape technology have produced a tape drive that requires less cleaning and provides improved backup/restore operation. Some of these new advancements include an automatic, rotating, head-cleaning sweeper that is used during the write or read recovery procedure to dislodge debris in the recording heads and drum. This DDS-4 drive has a MTBF rating of 250,000 hours at a 30% duty cycle.

Automated Head Cleaning

Reduces head-cleaning cycles by two times over DDS-3

Industry-Standard DDS-4

DDS-4 format has a drum rotation speed of 8503 rpm while the tape moves at 11.6 mm/s. Features of the format and implementation of it allow an increased linear bit density compared with DDS-3 drives, achieving a greater transfer rate and capacity.

Easy Installation and Serviceability

With the HP hot plug tape configuration, the server does not need to be taken off-line to install the tape drive. Simply plug the tape drive into a 1.6″ hot plug bay or add the top hat for 2 1-inch bay configurations and install the backup software.

Manageability

Supported through Insight Manager, alerting the administrator when tape status changes or when rewrite/reread thresholds are exceeded.

This utility allows customers to monitor their tape drives for pre-failure analysis and allows customers to upgrade their tape drive firmware when necessary.

Mix and Match Capabilities

With the hot plug tape configuration, customers are now able to mix 1″ hot plug hard drives and tape drives on the same SCSI bus even if they are using the Integrated Smart Array Controller or the Smart Array 5300 series controller. Customers will no longer need a separate controller for their tape configurations. Similar support is available on selected AlphaServer host bus adapters.

Compatibility and Integration Testing

The HP 20/40 GB DAT tape drives are fully supported and compatible with ProLiant and AlphaServer systems and controllers. HP thoroughly tests products with leading software and operating systems, including VERITAS Backup Exec, CA ARCserve and Dantz Retrospect.

High Availability

With hot plug configurations, you never have to take down your system to replace a failed or non-responding tape device. This increases your uptime for customer accessibility to your systems.

PRODUCT HIGHLIGHTS *(continued)*

Compression

Built-in hardware compression

Software Supported

VERITAS Backup Exec v8.0 for Windows NT/2000

VERITAS Backup Exec v8.5 for NetWare

Computer Associates ARCserve v6.61 for Windows NT

Computer Associates ARCserve v6.6 for NetWare

Computer Associates ARCserve 2000 for Windows 2000

Dantz Retrospect Backup v5.6 (Server and Workgroup versions) for Windows NT/2000

CarePaqs (service & support)

Additional Warranty protection and/or HP Installation packages can be purchased.

Software Product Services

- Standalone telephone support
- Rights to a new license
- Media and documentation updates

Hardware Product Services

- Installation services
- On-site Maintenance (includes warranty support)
- Response time upgrades during the warranty period
- Post-warranty coverage
- RAID setup and performance consulting via statement of work

For additional hardware installation and maintenance information please refer to the URL's listed below:
http://www.Services Installation.com
http://www.Services Maintenance.com

Warranty Upgrade Options

- Response - Upgrade on-site response from next business day to same day 4-hours
- Coverage - Extend hours of coverage from 9 hours x 5 days to 24 hours x 7 days
- Duration - Select duration of coverage for a period of 1, 3, or 5 years

PRODUCT HIGHLIGHTS *(continued)*

SmartStart

The server configuration and software integration tool from HP

CS Support

HP Services provides a three-year, limited warranty, fully supported by a worldwide network of resellers and service providers and toll-free 7 x 24 hardware technical phone support during the warranty period. In addition, available service offerings include a full range of CarePaq packaged hardware and software services:

- Installation and start up
- Extended coverage hours and enhanced response times
- System management and performance services
- Availability and recovery services

Warranty

The warranty for this product consists of 3 years parts, 0 year labor, 0 year on-site

HP 20/40 GB DAT DRIVE SPECIFICATIONS

Protocol Support	Ultra2 SCSI, LVD interface	
O/S Support	Windows NT v4.0, Windows 2000	
	Netware v4.12 & 5.0	
	OpenVMS (native)	
	Tru64 UNIX (native)	
	Linux for Intel®/Alpha (native) *not supported with hot plug configuration	
	SCO Unix v5.x OpenServer®(native) * not supported with hot plug configuration	
	SCO UnixWare® v7.1x (native) not supported with hot plug configuration	
	Sun Solaris v7.0, v8.0 (native) not supported with hot plug configuration	
Dimensions (H x W x D)	**Physical**	
	20/40 GB DAT Drive, Internal	1.6 x 5.9 x 5.9 in/4.06 x 14.98 x 14.98 cm
	20/40 GB DAT Drive, External	10 x 7.9 x 2.6 in/25.4 x 20.07 x 6.6 cm
	20/40 GB DAT Drive, Hot Plug	8.5 x 4.63 x 1.75 in/21.59 x 11.76 x 4.45 cm
	Shipping	
	20/40 GB DAT Drive, Internal	13.88 x 11.38 x 9.25 in/35.25 x 28.90 x 23.49 cm
	20/40 GB DAT Drive, External	15.75 x 12.95 x 11.25 in/40 x 32.83 x 28.57 cm
	20/40 GB DAT Drive, Hot Plug	14.13 x 10 x 11.13 in/35.89 x 25.4 x 28.27 cm
Weight	**Out of box**	
	20/40 GB DAT Drive, Internal	1.4 lb/0.63 kg
	20/40 GB DAT Drive, External	18.4 lb/8.35 kg
	20/40 GB DAT Drive, Hot Plug	1.9 lb/0.86 kg
	Shipping	
	20/40 GB DAT Drive, Internal	7.7 lb/3.5 kg
	20/40 GB DAT Drive, External	25 lb/11.34 kg
	20/40 GB DAT Drive, Hot Plug	7.75 lb/3.52 kg

HP 20/40 GB DAT DRIVE SPECIFICATIONS *(continued)*

UPC Code	**20/40 GB DAT, Internal**	
	-B21 (Opal)	UPC 720591222666
	-B22 (Carbon)	UPC 613326389447
	20/40 GB DAT, External	
	-001 (Opal)	UPC 720591222680
	-002 (Carbon)	UPC 613326433270
	20/40 GB DAT, Hot Plug (Carbon)	UPC 720591546694
Cables Supported	Cables	Internal Options contain a 2-Device ribbon cable with switchable LVD/SE terminator
		External Options contain (1) 3ft/0.91 m Wide to VHDCI External Cable
		VHDCI to Wide 6 ft/1.83 m – 295644-B21
		VHDCI to Narrow 6 ft/1.83 m – 295646-B21
		VHDCI to VHDCI 6 ft/1.83 m – 341174-B21
Drive LED Indicators	Busy	Flashes when the drive is processing a command
	Tape	Flashes when physical media is in motion
	Caution	Flashes when there is an error status on the drive
Buffer	2 MB non-parity buffer embedded within the tape drive	
Input Requirements	Range Line Voltage	AC 100 to 200/220 to 240V
	Line Frequency	20 MHz
	Typical Input Current	2.3A at 120 VAC
Interface	Ultra2 SCSI, LVD	
Maximum Number of Drives	5 drives per SCSI bus	
	Maximum Transfer Rate	16.8 GB/hr (2:1 compression)
	Typical Transfer Rate	6 GB/hr
	Average load/unload swap	< 15 seconds
	Search speed	45 seconds to any point on a 150m cassette
Media	HP Branded DDS-4 (150m)	
Power Requirement	+5V±5%/+12V±10%	
Power Consumption	12 Watts (average internal)	
	21 Watts (average external)	

HP 20/40 GB DAT DRIVE SPECIFICATIONS *(continued)*

Tape Format	Recording Method	Helical Scan
	Recording Format	ECMA-288, DDS-4
	Data Compression	Lempel-Ziv (DCLZ)
	Error detection/correction	Reed Solomon
Relative Humidity (non-condensing)	Operating	20% to 80%
	Shipping	5% to 95%
Temperature Range	Operating	41° to 104° F/5° to 40° C
	Shipping	-22° to 140° F/-30° to 60° C

FAMILY COMPARISON

	20/40 GB DAT	12/24 GB DAT	4/8 GB DAT
Announce Date	Oct 1999	June 1998	April 1996
Capacity (native)	20 GB	12 GB	4 GB
SCSI Interface	Ultra2, LVD	Fast-Wide/SE	Single ended
Buffer	2 MB non-parity	1 MB non-parity	1 MB non-parity
Firmware Upgradable	Yes with TSMC	Yes with TSMC	Yes with TSMC
Maximum Drives per bus	5	5	5
MTBF	>250,000 @ 30%	>200,000 @ 20%	>200,000 @ 20%
Transfer Rate (native)	2.4 MB/s	1.2 MB/s	750 KB/s

SERVER AND TAPE COMPATIBILITY

ProLiant Servers	Internal	External	Hot Plug
DL360		X	
DL380	X	X	X
DL380G2		X	X
DL580		X	X
PL8500		X	X
ML 330	X	X	
ML350	X	X	X*
ML370	X	X	X
ML530	X	X	X
ML570	X	X	X
PL8000	X	X	X
CL380	X	X	X
CL1850	X	X	X
Deskpro AP250, 300	X	X	
Professional WS AP550, SP750	X	X	

NOTE: When upgrading a Non-Hot Plug Model to Hot Plug, the purchase of the Hot Plug Cage Upgrade Option Kit (161275-B21) is required.

SERVER AND TAPE COMPATIBILITY *(continued)*

Host Bus Adapters and Controllers for Intel Based Servers	
64-bit/66 MHz Single Channel Wide Ultra3 SCSI Adapter	154457-B21
64-bit/66 MHz Dual Channel Wide Ultra3 SCSI Adapter	129803-B21
Smart Array 5i Controller	226593-B21 *supports hot plug tape drives only
Smart Array 532 Controller	225338-B21 *supports hot plug tape drives only
Smart Array 5304/128	158939-B21 *supports hot plug tape drives only
Smart Array 5302/64	124992-B21 *supports hot plug tape drives only
Smart Array 5302/32	166207-B21 *supports hot plug tape drives only

ALPHASERVER AND TAPE COMPATIBILITY

AlphaServer	Internal	External	Hot Plug
Alpha Server 4100	X	X	
AlphaServer DS10	X	X	X
AlphaStation DS10	X	X	X
XP900	X	X	X
XP1000	X	X	X
PWS 500a/au	X	X	X
DS10L		X	X
AlphaServer DS20E	X	X	X*
AlphaStation DS20E	X	X	X*
AlphaServer ES40	X	X	X*
AlphaStation ES40	X	X	X*
GS60E			
GS80/160/320			

* **NOTE**: These platforms also have internal disk enclosures support of the hot plug option, in addition to support in external LVD enclosures.

Host Bus Adapters and Controllers Compatibility for AlphaServer	
32-bit Single Channel UltraWide HBA	KZPBA-CA *not supported with hot plug
32-bit Single Channel LVD LSI SYM 8952Uia HBA	SN-KZPCA-AA
32-bit Single Channel LVD SCSI LSI SYM 8952Uia HBA	3X-KZPCA-AA
32-bit Single Channel LSI SYM 8951Uia	30-56041-01
Comb SCSI/Ether Dual Channel	KZPCM-DA *not supported with hot plug
64-bit Dual ChannelUltra 3 LVD HBA	3X/-KZPEA-DB
Combo Ultra2 SCSI/2D Video/10-100 Ethernet	3X/-DEPVZ-AA

CONFIGURATION INFORMATION

BASE CONFIGURATION

Select one:

Model Number	Carbon Part Number	Opal Part Number	Model Description
20/40 GB DAT, Internal	157769-B22 3R-A3752-AA	157769-B21 3X-SD20X-LB 3X-SD20X-AA	Contains one 20/40 GB DAT tape drive, US English hard copy manual and translation CD, Warranty card, 1 DDS-2 data cassette, 1 DAT cleaning cassette, 2-interncal cables.
20/40 GB DAT, External	157770-002	157770-001	Contains one 20/40 GB DAT tape drive enclosed in an external housing, power cord, SCSI terminator, 1 DDS-4 data cassette, 1 DAT cleaning cassette, external 3′ cable, warranty card, US English documentation with translations CD.
20/40 GB DAT, Hot Plug	215487-B21 3R-A2780-AA	---- ----	Contains one 20/40 GB DAT tape drive enclosed in a hot plug carrier, 1 DAT data cassette, 1 DAT cleaning cassette, warranty card, US English documentation with translations CD.

RELATED OPTIONS

Media	DAT 20/40 GB Data Cassette 10 Pack	152842-001
	DAT Cleaning Cassette	242781-001
Tape Storage Software	Data Protection Software Suite	259596-B21
Rackmount Tape Options and Cable Kits	3U Rackmount Kit, All	274338-B21 (Please refer to "Rackmount Tape Drive Kits" QuickSpec for further information)
	LVD Cable Kit, 68-pin HD/VHDCI	168048-B21 (Internal and External Cables)
	LVD Cable Kit, 68-pin HD/68-pin HD	242381-B21 (Internal and External Cables)
	68-pin HD/VHDCI, 12 ft/3.66 m	341177-B21 (External Cable only)
	68-pin HD/68-Pin HD, 16.40 ft/ 5 m	328215-001 (External Cable only)
	68-pin HD/68-Pin HD, 32.81 ft/10 m	328215-002 (External Cable only)

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